layer may be directly incorporated into the shell or housing material of a device such as a keyboard or mouse. Further, although finger grooves are preferable and are discussed herein as to certain exemplary embodiments, a finger groove is not necessary in all aspects of the present invention.

[0056] In further exemplary embodiments, the touch slider may be of any size. For instance, the touch slider may be of a size suitable for a finger to slide along. At the other extreme, the touch slider may be of a much larger size, such as large enough for a human hand to slide along. Such a larger configuration may be, e.g., 6 foot by 3 foot and/or incorporated into a table such as by being mounted on the underside surface of a table, thereby being configured to sense the presence and 1-dimensional position of a hand lying on or closely above the table. Larger configurations may use the same or similar algorithms as discussed herein but may require different oscillator hardware values depending upon the size. As another example, the touch slider may even be of such size as to detect the location of a person or other object within a room or other similar area. Such a touch slider may be incorporated into the floor of a room to detect the presence and position of persons walking within the room. Accordingly, the term "pointing member" as used herein may, as is appropriate for the particular configuration and size of the touch slider, include objects larger than a human finger, such as a human hand, a human body, and/or other small or large object.

[0057] While exemplary systems and methods embodying the present invention are shown by way of example, it will be understood, of course, that the invention is not limited to these embodiments. Modifications may be made by those skilled in the art, particularly in light of the foregoing teachings. For example, each of the elements of the aforementioned embodiments may be utilized alone or in combination with elements of the other embodiments.

What is claimed is:

1. A device for measuring a position of a pointing member, comprising:

a first capacitive node and a second capacitive node each commonly coupled to a first circuit node; and

a third capacitive node and a fourth capacitive node each commonly coupled to a second circuit node,

the first, second, third, and fourth capacitive nodes being disposed so as to be adjacent and interdigitated.

2. The device of claim 1, further including:

a fifth capacitive node and a sixth capacitive node each commonly coupled to the first circuit node; and

a seventh capacitive node and an eighth capacitive node each commonly coupled to the second circuit node,

the first, second, third, fourth, fifth, sixth, seventh, and eighths capacitive nodes being disposed so as to be interdigitated.

3. The device of claim 1, wherein the first, second, third, and fourth capacitive nodes each comprises an etched conductive tracing on a substrate.

4. The device of claim 1, wherein each of the first, second, third, and fourth capacitive nodes are substantially wedge shaped.

5. The device of claim 1, wherein each of the first, second, third, and fourth capacitive nodes extend in an axial direction and are interdigitated with each other in the following order along a direction perpendicular to the axial direction: first capacitive node, then third capacitive node, then second capacitive node, then fourth capacitive node.

6. The device of claim 1, wherein the first circuit node is coupled to a first oscillator and the second circuit node is coupled to a second oscillator.

7. The device of claim 6, wherein the first and second oscillators are each configured to be disabled while the other oscillator is enabled.

8. A device for measuring a position of a pointing member, comprising:

a first capacitive node and a second capacitive node each commonly coupled to a first circuit node;

a third capacitive node and a fourth capacitive node each commonly coupled to a second circuit node,

the first, second, third, and fourth capacitive nodes being disposed so as to be interdigitated;

an insulating material disposed over the first and second circuit nodes; and

a groove formed in the insulating material and running axially in an axial direction, the first, second, third, and fourth capacitive nodes also extending in the axial direction.

9. A device for measuring a position of a pointing member, comprising:

a first capacitive node, a capacitance of the first capacitive node depending upon the position of the finger;

a second capacitive node, a capacitance of the second capacitive node depending upon the position of the finger;

an oscillator;

a switch coupled between the first capacitive node, the second capacitive node, and the oscillator, the switch being configured to connect either the first capacitive node or the second capacitive node with the oscillator, the oscillator being configured to generate, depending upon a state of the switch, either a first signal having a characteristic depending upon the capacitance of the first capacitive node or a second signal having a characteristic depending upon the capacitance of the second capacitive node; and

a frequency ratio determinator determining a ratio of the characteristics of the first and second signals.

10. The device of claim 9, wherein the frequency ratio determinator includes a counter configured to count a number of pulses in the first and second signals over a known time interval in order to determine first and second frequencies.

11. The device of claim 10, wherein the counter is configured to count the number of pulses in the first signal over a first portion of the time interval and the number of pulses in the second signal over a second non-overlapping portion of the time interval.

12. The device of claim 10, wherein the time interval is substantially less than a period of ambient alternating current power.